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Statement of

Mr. Peter Potochney

Acting Assistant Secretary Of Defense

(Energy, Installations, and Environment)

Before the Senate Appropriations Committee

Subcommittee on Military Construction, Veterans Affairs, and Related Agencies

Fiscal Year 2018 Department of Defense Budget Request for

Energy, Installations, and Environment

June 6, 2017

Introduction

Chairman Moran, Ranking Member Schatz and distinguished members of the subcommittee: Thank you for the opportunity to present the President's Fiscal Year (FY) 2018 budget request for the Department of Defense programs supporting energy, installations, and the environment.

First, let me thank you for your support for our installation mission. Our installations are the foundation from which America's military capability is generated, deployed, and sustained. As the missions within the Department change to meet emerging threats, and as advances in technology generate new requirements for how we use our physical plant, we must be ready and flexible in our vision and processes to adapt rapidly in response to future challenges. We could not have progressed as far as we have without the continuing support of Congress, and in particular, this subcommittee.

The DoD operates an enormous real property portfolio encompassing more than 568,000 facilities on more than 500 bases, posts, camps, stations, yards, and centers. The replacement cost of the Department's installations exceeds $1 trillion, excluding the cost of the 27 million acres of land that our installations occupy. Our installations remain critical components of our ability to fight and win wars. Our warfighters cannot do their job without bases from which to fight, on which to train, or in which to live when they are not deployed. Our installations support our families – many of which live there and all of which use their support services. The bottom line is that installations support our military readiness. Our primary focus in our FY 2018 budget request is to ensure that our military installations are capable of supporting the missions of our forces, today and in the future. America's military installations, including both their built and natural environments, must be managed in a comprehensive and integrated manner to optimize our investment in the assets needed to accomplish the mission. The FY 2018 President's Budget request builds on readiness improvements included in the FY 2017 budget and the FY 2017 Request for Additional Appropriations, adds resources to balance the force, and address evolving national security challenges such as recapitalizing and modernizing the nuclear enterprise.

My testimony will outline the FY 2018 budget request specific to the Military Construction (MilCon) appropriation and highlight a handful of top priority issues – namely, the Administration's request for Base Realignment and Closure (BRAC) authority, the status of the movement of Marines to Guam, the Department's investments in assuring the delivery of fuel to combat forces, and an overview of our facility energy programs.

My testimony also will address our environmental budget, which has been relatively stable in recent years. I will provide an update on our environmental programs, including progress in our compliance programs where we've seen a decrease in environmental violations, and our efforts to address perfluorooctanoic sulfonate (PFOS) and perfluorooctane acid (PFOA) in drinking water.

Fiscal Year 2018 Budget Request – Military Construction and Family Housing

The President's FY 2018 budget requests $9.8 billion for the MilCon and Family Housing Appropriation – an increase of approximately $2.3 billion from the FY 2017 base budget request

and $2.0 billion more than the FY 2017 base budget enacted level. This increase is directly attributable to Secretary of Defense's guidance to fund high priority readiness and weapon's modernization programs. In addition to construction required to bed-down new or changing missions, this funding will also be used to restore and modernize enduring facilities, acquire new facilities where needed, and eliminate those that are excess or obsolete. Overall, this MilCon request provides $1.7 billion for new mission facilities and another $5.5 billion for current mission facilities.

While the FY 2018 budget request is a marked improvement compared to the last few years, the funding is focused on restoring the Department's ability to respond to warfighter requirements and mission readiness, and therefore, is still insufficient to reverse the impacts to our facilities resulting from sequestration. In reaction to the Budget Control Act and subsequent Balanced Budget Acts, Defense Components significantly reduced their investments in Facilities Sustainment, MilCon, and Restoration and Modernization. Combined, these reductions have significantly degraded our facilities, necessitating significant investment for facilities repair and replacement in the future and exacerbating the need for the Department to be able to right-size its infrastructure rather than continuing to waste scarce resources maintaining excess facilities. The Department has an unfunded backlog of deferred maintenance and repair (M&R) work that exceeds $140 billion, raising significant concerns about the performance and reliability of our facilities and installations.

Table 1. MilCon and Family Housing Budget Request, FY 2017 versus FY 2018

			Change from FY 2017	
Category	**FY 2017 Request* ($ Millions)**	**FY 2018 Request ($ Millions)**	**Funding ($ Millions)**	**Percent**
Military Construction	**5,977**	**7,965**	1,988	33.3%
Base Realignment and Closure	**205**	**256**	51	24.9%
Family Housing	**1,320**	**1,407**	87	6.6%
NATO Security Investment Program	**178**	**154**	(24)	(13.5%)
TOTAL	**7,680**	**9,782**	2,102	27.4%

*Includes $236 million requested in the FY 2017 Request for Additional Appropriations (RAA). The FY 2017 Consolidated Appropriations Act enacted the RAA MilCon request in the Overseas Contingency Operations appropriations.

Military Construction

We are requesting $8.1 billion for the MilCon account, which is the substantially higher than our previous budget submission. While this represents a 33 percent increase from our FY 2017 request, inclusive of the FY 2017 Request for Additional Appropriations, this level of funding is still not sufficient to reverse the impacts imposed through the implementation of sequestration. This request addresses requirements for construction at enduring installations stateside and overseas, and for specific programs such as the NATO Security Investment Program and the

Energy Resilience and Conservation Investment Program. In addition, we are targeting MilCon funds in three key areas as discussed immediately below.

As mentioned earlier, the Secretary of Defense issued guidance that the Administration's increased topline for DoD would focus on improving readiness and increasing warfighter lethality. In implementing this guidance, the DoD Components applied more than 54 percent of the MilCon budget request to construct operational/training facilities ($3.3 billion) and maintenance/production facilities ($1.1 billion). MilCon is key to supporting these mission areas by ensuring our forces have the right size and mix of facilities to make them effective warfighters. Our FY 2018 budget request includes two projects at Stuttgart and Wiesbaden, Germany, to continue the European Infrastructure Consolidation. The budget request also includes funding to support bed-down of new missions, such as $269 million for three projects to support arrival of Joint Strike Fighters at MCAS Cherry Point, North Carolina, RAF Lakenheath, United Kingdom, Eielson AFB, Alaska, and Eglin AFB, FL; $61 million for a project to support the F/A-18 Super Hornet at NAS Lemoore, California and $34 million for projects at MCAS Iwakuni and NAS Fort Worth JRB to support arrival of the KC130J tanker. Additionally, more than $1.7 billion is included in this request to support Combatant Command priorities. For instance, $15 million will be used to build a squadron operations facility at Central Command's Al Udeid AB in Qatar; in the European Command's area of responsibility (AOR), $22 million for a strategic aircraft parking expansion project at Souda Bay, Greece, $27 million for housing improvements at NAS Rota, Spain, and $27 million for a Guardian Angel Operations Facility at Aviano AB, Italy; and in the Pacific Command AOR, $53 million is requested for an unmanned aerial vehicle hangar at Kunsan AB, South Korea, $76 million for a fuel storage project in Darwin, Australia, and $28 million for Special Tactics Operations Facility at Kadena AB, Japan.

In the second key area, the FY 2018 budget request includes $858 million for medical facility recapitalization. This includes $251 million for the eighth and final increment to replace the hospital at Fort Bliss, $250 million for the first phase of Fort Leonard Wood's hospital replacement, $124 million for the second increment of the Walter Reed Medical Center Addition/Alteration and $107 million for the seventh increment of the Rhine Ordnance Barracks Medical Center replacement in Germany. The request also includes $126 million to construct much needed blood donor/processing facilities, consolidate medical/dental facilities at several Marine Corps installations and expand/alter one Air Force medical/dental facility. All the projects are crucial for our continued delivery of the quality health care that our Service members and their families deserve.

Finally, the third key area is Quality of Life. Our FY 2018 MilCon budget request includes $249 million to continue implementing the Department's 10-year plan (started in FY 2011) to replace and recapitalize more than half of the DoD Education Activity (DoDEA) schools. These funds will replace four schools in poor condition at Spangdahlem AB, Germany; Stuttgart, Germany; Vicenza, Italy; and Punta Borinquen, Puerto Rico. In recent years, we also have heavily invested in Unaccompanied Personnel Housing (UPH) to support initiatives such as BRAC implementation global restationing, and force structure modernization.

Family and Unaccompanied Housing

A Department priority that has not changed is our commitment to protect the quality of life for military personnel and their families by ensuring access to suitable, affordable housing. The environment in which our forces and their families live has an impact on their ability to do their job, and on the Department's ability to recruit and retain. Quality of life – to include the physical condition of the facilities in which our service members and their families live and work and a safe, healthy environment around and within those facilities – is also critical to the readiness and morale of the force. This request reflects that priority.

Our FY 2018 budget request includes $1.4 billion to fund construction, operation, and maintenance of government-owned and leased family housing worldwide and to provide housing referral services to assist military members in renting or buying private sector housing. This funding request supports more than 36,000 government-owned family housing units, most of which are on enduring bases in overseas locations now that the Department has privatized the vast majority, more than 202,000 units, of our family housing in the United States. The budget request also supports more than 7,500 government-leased family housing units where government-owned or privatized housing is unavailable. The requested funding will ensure that U.S. military personnel and their families continue to have suitable housing choices.

Table 2. Family Housing Budget Request, FY 2017 versus FY 2018

			Change from FY 2017	
Category	**FY 2017 Request ($ Millions)**	**FY 2018 Request ($ Millions)**	**Funding ($ Millions)**	**Percent**
Family Housing Construction/Improvements	356	351	(5)	(1.4%)
Family Housing Operations & Maintenance	961	1,052	91	9.5%
Family Housing Improvement Fund	3	3	0	0
Military Unaccompanied Housing Improvement Fund	0	1	1	100%
TOTAL	**1,320**	**1,407**	**87**	**6.6%**

DoD also continues to encourage the modernization of Unaccompanied Personnel Housing (UPH) to improve privacy and provide greater amenities. In recent years, we have heavily invested in UPH to support initiatives such as BRAC implementation global restationing, force structure modernization and Homeport Ashore – a Navy program to move Sailors from their ships to shore-based housing when they are at their homeport. The FY 2018 MilCon budget request includes $250 million for five construction and renovation projects that will improve living conditions for trainees and unaccompanied personnel, as well as $76 million for four dining facilities.

Our request also includes $3 million to support administration of the Military Housing Privatization Initiative (MHPI) program as prescribed by the Federal Credit Reform Act of 1990. This includes monitoring MHPI programmatic goals and performance, and risk associated with federal credit assistance provided for MHPI projects (e.g., government direct loans and limited loan guarantees). The Department continues to work with our MHPI project owners to help ensure the long-term viability of individual projects and the program as a whole. We are continually assessing the impact that Basic Allowance for Housing (BAH) changes may have on project revenue, which covers project operating and maintenance expenses, funds debt payments, and finances the future housing revitalization and recapitalization necessary to provide continued high quality housing for military families and to ensure these projects remain viable throughout their 40-50 year lifespans.

Facilities Sustainment and Recapitalization

In addition to MilCon, the Department invests significant funds to maintain and repair our existing facilities. Sustainment represents the Department's single most important investment in preserving the condition of its facilities. It includes regularly scheduled maintenance and repair or replacement of facility components—the periodic, predictable investments that should be made across the service life of a facility to slow its deterioration, optimize investment, save resources over the long term, maintain safety, optimize facility performance across its lifecycle, and help improve the productivity and quality of life of our personnel.

The accounts that fund these activities have taken significant cuts in recent years; funding constraints under the Budget Control Act led Defense Components to accept risk in facilities sustainment and recapitalization. Recognizing that too much risk has been endured in maintaining their facilities, the Military Departments increased Facility Sustainment commitments in the FY 2018 budget request, which includes $8.5 billion of Operations and Maintenance (O&M) funding to sustain our real property, a 15 percent funding increase compared to the Department's FY 2017 budget request.

Table 3. Sustainment and Recapitalization Budget Request, FY 2017 versus FY 2018

			Change from FY 2017	
Category	**FY 2017 Request* ($ Millions)**	**FY 2018 Request ($ Millions)**	**Funding ($ Millions)**	**Percent**
Sustainment (O&M)	7,464	8,555	1,091	14.6
Recapitalization (O&M)	3,260	3,728	468	14.4
TOTAL	**10,533**	**12,283**	**1,559**	**14.5**

*Includes $13.7 million in Sustainment and $1.2 billion in Recapitalization funding DoD requested in its FY 2017 Request for Additional Appropriations. Congress enacted $13.7 million in Sustainment and $955 million for Recapitalization.

Our FY 2018 budget request includes $3.7 billion of O&M funding for recapitalization. The combined facility sustainment and recapitalization funding of $12.3 billion is a 14.5 percent

increase from the FY 2017 President's Budget request (inclusive of the FY 2017 Request for Additional Appropriations), but still reflects an acceptance of significant risk in DoD facilities. In fact, the request supports an average DoD-wide sustainment funding level that equates to 78 percent of the Facilities Sustainment Model requirement as compared to the Department's goal to fund sustainment at 90 percent of modeled requirements.

Previous budgets have limited investment in facilities sustainment and recapitalization to the point that 23 percent of the Department's facility inventory is in "poor" condition (Facility Condition Index (FCI) between 60 and 79 percent) and another 10 percent is in "failing" condition (FCI below 60 percent) based on recent facility condition assessment data. Compared to last year, the Department is seeing more poor facilities moving into failing conditions. Until the out-year sequestration challenges are overcome, the Department will continue to take risk in funding to sustain and recapitalize existing facilities. This will ultimately result in DoD facing larger bills in the out-years to restore or replace facilities that deteriorate prematurely. That said, as the DoD Components implement our policy to standardize facility inspections using the Sustainment Management System, commonly referred to as "BUILDER," we are seeing innovative investment techniques evolving to strategically apply the sustainment and recapitalization funds to maximize return on this investment. For instance, the Navy uses the BUILDER FCI output to prioritize funding on subcomponents that are most critical to keeping a facility in operation.

Fiscal Year 2018 Budget Request – Environmental Programs

Military readiness depends, to a significant degree, on our careful and responsible stewardship of the lands and natural resources entrusted to us. From protecting the health of our members to maintaining access to critical training lands, the Department's environmental budget is inextricably linked to our primary mission. We have sustained our readiness with a relatively stable budget despite growing challenges, which include new drinking water health advisories and critical habitat designations. In the President's FY 2018 budget, we are requesting $3.4 billion, a very slight decrease from FY 2017, to continue the legacy of excellence in our environmental programs.

The table below outlines the entirety of the DoD's environmental program, but I would like to highlight a few key elements where we are demonstrating significant progress – specifically, our environmental restoration program, our efforts to leverage technology to reduce the cost of cleanup, and the Readiness and Environmental Protection Integration (REPI) program.

Table 4: Environmental Program Budget Request, FY 2018 versus FY 2017

			Change from FY 2017	
Program	**FY 2017 Request ($Millions)**	**FY 2018 Request ($Millions)**	**Funding ($Millions)**	**Percent**
Environmental Restoration	1,030	1,009	(21)	(2)
Environmental Compliance	1,493	1,443	(50)	(3)
Environmental Conservation	420	424	4	0
Pollution Prevention	84	75	(9)	(11)
Environmental Technology	186	203	17	9
BRAC Environmental	181	220	39	22
TOTAL	**3,395**	3,374	(21)	(1)

We are requesting $1.2 billion to continue cleanup efforts at the remaining Installation Restoration Program (IRP – focused on cleanup of hazardous substances, pollutants, and contaminants) and Military Munitions Response Program (MMRP – focused on the removal of unexploded ordnance and discarded munitions) sites. This includes $1.0 billion for "Environmental Restoration," which encompasses active installations and Formerly Used Defense Sites (FUDS) locations and $220 million for "BRAC Environmental." The amount of BRAC Environmental funds requested will be augmented by the use of land sale revenue and prior year, unobligated funds. These investments help to ensure DoD continues to make property at BRAC locations safe and environmentally suitable for development. We remain engaged with the Military Departments to ensure they are executing plans to spend remaining unobligated balances in the BRAC account.

Table 5: Progress Toward Cleanup Goals

Goal: Achieve Response Complete at 90% and 95% of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, by FY 2018 and FY 2021, respectively			
	Status as of the end of FY 2016	Projected status at the end of FY 2018	Projected status at the end of FY 2021
Army	90%	93%	97%
Navy	82%	85%	90%
Air Force	82%	88%	94%
DLA	86%	95%	98%
FUDS	82%	88%	94%
Total	**85%**	**90%**	**94%**

By the end of 2016, the Department, in cooperation with state agencies and the Environmental Protection Agency, completed cleanup activities at 85 percent of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, and is now monitoring the results. During FY 2016 alone, the Department completed cleanup at over 630 sites. Of the roughly 39,700 restoration sites, almost 33,000 are now in monitoring status or have completed cleanup. We are currently on track to meet our program goal of completing cleanup at 90 percent of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, by the end of FY 2018. We anticipate completing cleanup at 94 percent of these sites by the end of FY 2021.

Our focus remains on continuous improvement in the restoration program: minimizing overhead; adopting new technologies to reduce cost and accelerate cleanup; refining and standardizing our cost estimating; and improving our relationships with State regulators through increased dialogue. All of these initiatives help ensure that we make the best use of our available resources to complete cleanup.

However, challenges remain that slow our progress. For example, unregulated or emerging contaminates, such as PFOS and PFOA, are becoming a top priority and require the DoD to reprioritize or reopen previously made decisions which will cause delays in achieving our goals.

Environmental Technology

A key part of DoD's approach to meeting its environmental obligations and improving its performance is the pursuit of advances in science and technology. The Department has a long record of success when it comes to developing innovative environmental technologies and getting them transferred out of the laboratory and into actual use on remediation sites, installations, ranges, depots, and other industrial facilities. These same technologies are also now widely used at non-Defense sites helping the nation as a whole.

While the FY 2018 budget request for Environmental Technology overall is $203 million, our core efforts are conducted and coordinated through two key programs – the Strategic Environmental Research and Development Program (SERDP – focused on basic and applied research) and the Environmental Security Technology Certification Program (ESTCP – which validates more mature technologies to transition them to widespread use). The FY 2018 budget request includes $72 million for SERDP and $32 million for ESTCP for environmental

technology demonstrations, with an additional $22 million requested specifically for energy technology demonstrations.

These programs have already achieved demonstrable results and have the potential to reduce costs by developing new ways of treating groundwater contamination and reducing the life-cycle costs of multiple weapons systems. As an example, SERDP has been investigating means to improve our ability to address issues associated with a suite of substances which include PFOS and PFOA. SERDP is funding projects to address a range of issues, including remediation, and replacement. This research has developed effective remediation approaches for contaminated soil and groundwater. SERDP has also started three projects focused on a fluorine-free substitute for PFOS and PFOA which meets the military's stringent performance requirements for firefighting foam.

Looking ahead, our environmental technology investments are focused on the Department's evolving requirements. In the area of Environmental Restoration, we are launching an aggressive initiative to develop more cost effective treatment options for groundwater contaminated with PFOS and PFOA. Finally, in the area of installation energy, we are focused on proving technology and solutions that cost-effectively improve the energy security of our installations and that protect our energy assets and facilities from cyber attack.

Environmental Conservation and Compatible Development

The Department continues to maintain access to the land, water, and airspace needed to support our mission. We successfully manage the natural resources entrusted to us on approximately 25 million acres. These lands include many high quality and unique habitats that are not only vital to readiness, but also sustain nearly 520 species-at-risk and over 400 that are federally listed as threatened or endangered species. Having high quality natural landscapes not only sustains these species but provides the conditions necessary for mission-essential activities.

The FY 2018 budget request for Conservation is $424 million. The Department invests these funds not only to manage and sustain our high quality lands but also to maximize the flexibility to use those lands for military purposes. Species endangerment and habitat degradation can and does have negative impacts on the mission. This is why we work hard to avoid the need for species to become listed, and if they do become listed, to manage these plants and animals in ways that both sustain the resource and enable us to execute our testing, training, and operational responsibilities. We have frequently avoided critical habitat designations and the associated impacts to the Department's mission because our Integrated Natural Resource Management Plans provide comparable protections for at-risk species. In fact, the U.S. Fish and Wildlife Service has granted exclusions from designation of critical habitat to DoD installations 71 times since FY 2012.

As a result of our management, research, and coordination efforts, the Department has regained access to important training lands. For example, Fort Hood worked with the U.S. Fish and Wildlife Service to manage the black-capped vireo and golden-cheeked warbler populations and eliminate restrictions affecting a total of 73,000 acres. Similarly, the Navy partnered with the California Department of Fish and Game to prevent the listing of the flat-tailed horned lizard, averting impacts to the Naval Air Facility El Centro mission. Sustaining military readiness by

working to avoid the need for species to be listed and to recover them enough to be delisted are top natural resource objectives for DoD.

Readiness and Environmental Protection Integration (REPI) Program

REPI investments protect training, testing, and operational assets of the Department. As training, testing, and operational activities increase, the ability to work with federal, state, local and private partners to limit incompatible development, relive regulatory restrictions and leverage resources that sustain critical military capability, becomes even more important. Investing in and taking advantage of current opportunities for innovative collaboration is paramount to securing the operational viability of local installations and ranges. Through REPI's partnership efforts we can continue to support the warfighter, provide value to the taxpayer, and protect military readiness.

To help ensure DoD sustains its national defense mission and help ensure military installations do not become refuges of last resort for threatened, endangered or at-risk species, the Department has developed a strategy that supports conservation beyond installation boundaries. Under this strategy DoD engages with other governmental and non-governmental partners who work with private landowners, to develop initiatives and agreements for protecting species for the purposes of avoiding or mitigating regulatory restrictions on training, testing, and operations on DoD lands. Expanding the scale and options for protecting species on non-DoD land benefits conservation objectives while helping sustain access to, and operational use, of DoD live training and test domains.

This strategic focus is a key element of the Readiness and Environmental Protection Integration (REPI) Program. Under REPI, the Department partners with conservation organizations and state and local governments to preserve buffer land and sensitive habitat near installations and ranges. Preserving these areas allows the Department to avoid more costly alternatives such as workarounds, restricted or unrealistic training approaches, or investments to replace existing test and training capability. Simultaneously, these efforts ease the on-installation species management burden and reduce the possibility of restricted activities, ultimately providing more flexibility for commanders to execute their missions.

Included within the $424 million for Conservation, $75 million is directed to the REPI Program. The REPI Program is a cost-effective tool to protect the nation's existing training, testing, and operational capabilities at a time of decreasing resources. In the last 14 years, REPI partnerships have protected more than 465,000 acres of land around 89 installations in 30 states. In addition to the tangible benefits of preserving DoD's existing training, testing, and operational assets, these efforts have resulted in significant contributions to biodiversity and recovery actions supporting threatened, endangered and candidate species.

The REPI Program supports the warfighter and protects the taxpayer because it multiplies the Department's investments through unique cost-sharing agreements. Even in these difficult economic times, REPI is able to directly leverage the Department's investments at approximately one-to-one with those of our partners, effectively ensuring compatible land uses around our installations for half-price.

In addition, DoD, along with the Departments of the Interior and Agriculture, continues to advance the Sentinel Landscapes Partnership to protect large landscapes where conservation, working lands, and national defense interests converge – places defined as Sentinel Landscapes. Established in 2013, the Sentinel Landscapes Partnership further strengthens interagency coordination and provides taxpayers with the greatest leverage of their funds by aligning federal programs to advance the mutually-beneficial goals of each agency.

Since the initiation of the Partnership, agencies from the three Departments have designated six locations as Sentinel Landscapes. Some of the military's most important installations anchor these Landscapes: Joint Base Lewis-McChord in Washington, Fort Huachuca in Arizona, Naval Air Station (NAS) Patuxent River and the Atlantic Test Ranges in Maryland (Middle Chesapeake Sentinel Landscape); Avon Park Air Force Range in Florida; Camp Ripley in Minnesota; and a consortium of installations in Eastern North Carolina. Partnerships at each of these locations are collaborating to preserve, enhance, and protect habitat and vital working lands near military installations in order to reduce, prevent, or eliminate military test, training, and operational restrictions due to incompatible development. At Joint Base Lewis-McChord, Fort Huachuca, and Middle Chesapeake Sentinel Landscapes combined, partners have invested more than $85 million over the last four years to advance each location's specific military mission and resource conservation goals. Over $17 million of the total investment during this period has come from state and local governments, whose support for the mission of the Partnership has helped to ensure its success.

Fiscal Year 2018 Budget Request – Energy Programs

Unlike the Department's MilCon and Environmental Remediation programs, where the budget request includes specific line items, our energy programs are subsumed across other accounts. The following sections describe the Energy portion of the budget request.

Operational Energy

Operational energy is the energy required for training, moving, and sustaining military forces and weapons platforms for military operations. In other words, operational energy is fuel for ships, aircraft, combat vehicles, and contingency bases. While energy is an essential component of our warfighting capability, longer operating distances, remote and austere geography, and anti-access/area denial threats are challenging the Department's ability to assure the delivery of fuel. As the ability to deliver energy is placed at risk, so too is the Department's ability to deploy and sustain forces around the globe.

The FY 2018 President's Budget supports a broad set of investments to counter emerging threats to the delivery of fuel to globally deployed combat forces. The Department is investing over $2.5 billion to upgrade and procure new equipment, improve propulsion, adapt plans, concepts, and wargames to account for increasing risks to logistics and sustainment, and enhance how the Department considers energy in developing new capabilities. As the Department responds to changing threats in Europe, the Asia-Pacific, and the Middle East, these initiatives are increasing capability and decreasing risks for warfighters deployed around the globe.

Separate from these investments and overseen by the Office of the Under Secretary of Defense (Comptroller), the FY 2018 budget also includes an estimated $9.2 billion request for 87.7 million barrels of fuel.

Highlights of the Department's investments in operational energy include:

- Propulsion. Over $1.4 billion in Department investments in improved engines for ships, aircraft, and tactical vehicles provide commanders with a range of options, including additional range, time on station, payload, speed, and endurance.
- Vehicle Upgrades. The Department is investing $234.6 million to improve and upgrade its tactical vehicles, including the Army's Joint Light Tactical Vehicle, Abrams tank, and Bradley infantry fighting vehicle, and the USMC's Light Attack Vehicle. These modifications will increase operational range, enable increased performance, or reduce the need for resupply on the battlefield.
- Contingency Basing. The Department's request includes $188.9 million to extend the operational reach and reduce the risks of sustaining forward deployed forces through improvements in shelters, mobile power generators, microgrids, and – when they meet mission requirements and increase warfighter capability – tactical solar.
- Operational Energy Capability Improvement Fund (OECIF). The Department is requesting $37.4 million in RDT&E funding to initiate operational energy research programs that improve military effectiveness organized around specific annual themes or focus areas, as well as support programs already underway.
- Alternative Fuels. When cost competitive and drop-in compatible with existing equipment, the Department procures and uses alternative fuels in worldwide operations. The Department is investing $26.5 million in research, testing, and certification to ensure our combat platforms are able to use alternatives to petroleum-based military specification fuels – including commercial jet fuel, synthetic fuel, and biofuels – as they enter the global supply chain.
- Oversight and Policy. The Department is requesting $4.9 million to support the oversight of operational energy activities by the Combatant Commands, Defense Agencies, and the Services. Per statute, the Department annually reviews the alignment of the President's Budget with the Department's *Operational Energy Strategy*.

In addition to these investments in the President's Budget, the Department is shaping how we develop, operate, and sustain future combat systems, including:

- Requirements of Future Systems. Partnered with the Joint Staff, my office ensures the consistent use of an Energy Key Performance Parameter (eKPP), informed by an Energy Supportability Analysis (ESA), in all Department programs. The eKPP and supporting ESA assess whether a platform can successfully perform its mission as intended and whether the platform can be sustained with energy using planned force structure, concepts, and tactics. In FY 2016, the Department review of 27 programs of high interest to the Joint Requirements Oversight Council confirmed that 14 had ESA-informed eKPPs, while the remaining 13 had waivers provided by the Joint Staff, Director of Logistics (most eKPP waivers were granted to C4ISR programs).

- Operational Risk in Wargames. To better understand the role of operational energy in future operations, we support long-range wargames conducted by the Department. In FY 2016, my office participated in the Air Force's Global Engagement 2016 wargame and the Defense Logistics Agency's 2016 Logistics Centric game. Operational Energy staff participated in the planning and execution of the games, as well as the assessment of game results.
- Supply Chain Analyses. In coordination with OSD, the Defense Logistics Agency – Energy, the Joint Staff, and the Services, my office is evaluating end-to-end fuel supply chain risks to assess implications for operations in the Pacific and European theaters.

Based on his experience in Iraq, then Lt Gen James Mattis, Director of Marine Corps Combat Development Command, directed researchers in 2005 to identify technological and operational improvements that would "unleash us from the tether of fuel." The operational energy investments in the FY 2018 budget request are focused on reducing that "tether" and increasing the capability of our forces on land, air, and sea.

Installation Energy

Installation energy is the energy used to power our 500 plus permanent installations here in the U.S and overseas. It also includes the fuel used in our 160,000 non-tactical fleet vehicles. Our installation energy bill remains our single largest base operating cost and utilities expenditures are included in the Base Operations O&M request. There is no explicit request in the overall budget for installation energy. In FY 2016, we spent $3.7 billion to heat, cool, and provide electricity to our facilities. To reduce this cost the Department is pursuing energy efficiencies through building improvements, new construction, and third party financed investments.

The Department's FY 2018 budget request includes approximately $783 million for investments in energy efficiency and water conservation projects, most of which are directed to existing buildings. The majority ($633 million) is in the Military Components' operations and maintenance accounts, to be used for sustainment and recapitalization projects. Such projects, in the past, typically involved retrofits to improve lighting, high-efficiency HVAC systems, double-pane windows, energy management control systems, and new roofs. The remainder ($150 million) is for the Energy Resilience and Conservation Investment Program (ERCIP), a MilCon account used to implement resilience through energy efficiency, water conservation, and renewable energy projects. This program was formerly known as the Energy Conservation Investment Program (ECIP) and was expanded this budget year to include projects that support the Department's energy resilience requirements. Each individual ERCIP project has a positive payback (i.e. Savings to Investment Ratio (SIR) > 1.0) and the overall program has a combined SIR greater than 2.0. This means for every dollar we invest in ERCIP, we generate more than two dollars in savings. Among other energy resilience projects, ERCIP's FY 2018 budget includes a cogeneration microgrid project at Schriever Air Force Base, whose mission is to support global space and missile defense operations. This project will ensure Schriever's critical missions will have the capability to become completely independent from the electrical grid to sustain operations in the event of a grid outage, natural disaster, or attack.

In addition to retrofitting existing buildings, we continue to integrate and optimize high-performance building attributes in our existing and newly constructed buildings that are cost

effective and reduce long-term operating costs. These requirements are now codified in Unified Facility Criteria (UFC) 1-200-02, High Performance and Sustainable Building Requirements, which was updated and published in December 2016. This guidance provides requirements for achieving high performance and sustainability in our facilities assisting in compliance with the Energy Policy Act (EPAct) of 2005, and the Energy Independence and Security Act (EISA) of 2007.

Further, the Department has broad alternative financing authorities that can be leveraged to implement installation energy initiatives. These authorities allow us to use performance based contracts, power purchase agreements, enhanced use leases and utilities privatization, among others. For example, the Department has taken advantage of third-party financing through Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs) to implement energy efficiency improvements in our existing buildings. Under these contracts private energy firms or utility companies make energy upgrades to our buildings and are paid back over time using utility bill savings. While such performance based contracts have long been part of the Department's energy strategy, the Services have significantly increased the use of ESPCs and UESCs. Since December 2011, the Department has awarded $2.3 billion in performance based contracts. These contracts are expected to save the DoD approximately $4 billion across the contract terms through energy efficiencies, maintenance savings and water efficiencies.

Energy Resilience and Facilities Energy Management

Ensuring our military bases are energy resilient is a top priority for the Department. Secure access to energy resources on our installations is critical to the execution of the DoD mission. The interdependent and vulnerable nature of existing electric power grids supporting our installations places risk on our mission capabilities and installation security as well as our power projection ability and support to global operations.

To ensure our installations have the ability to prepare for and recover from energy disruptions that impact mission assurance, the Military Departments are implementing the DoD energy resilience policy my office issued early last year. The policy requires the Military Departments to take the necessary steps to plan for and have the capability to ensure available, reliable and quality power to continuously accomplish our missions from our installations and facilities. This includes prioritizing installation missions, conducting assessments and planning and programming energy resilience projects to reduce mission risk for improved energy resilience and security. As a follow on to this policy, an Energy Resilience: Operations, Maintenance and Testing Strategy and Implementation Guide was recently issued by my office to provide installation commanders, mission operators and energy managers procedures to ensure that energy generation systems, infrastructure, equipment, and fuel are available and reliable to support critical mission operations on military installations. We are currently working on guidance that integrates energy resilience metrics into energy resilience requirements to better inform investment decisions.

The Department's energy efficiency efforts, not only contribute to energy resilience by reducing critical loads, but lowers our base operating costs – freeing up funds for the warfighter. Since FY 2005, the Department has reduced its facility energy usage by ~16 percent, helping the DoD avoid approximately $5 billion in utility costs. To further improve facilities energy management,

my office issued a policy to require the Military Departments to develop Installation Energy Plans (IEP) by FY 2019. Implementation of this policy ensures the Department makes installation energy investments that are holistically planned to improve facilities, decrease operation and maintenance costs and improve energy resilience in support of mission.

With respect to distributed energy sources, which includes renewable and alternative energy, the Department is focused on cost effective projects that lower costs and when economically feasible, contribute to energy resilience. Most large-scale distributed energy projects we pursue are financed by private developers. DoD's authorities for distributed energy - particularly the ability to sign energy production facility agreements for up to 30 years – provide incentives for private firms to fund the projects themselves, and must also provide a business case that they are able to offer DoD lower energy rates than are being paid currently. The DoD does not make any capital investment in these distributed energy projects. When the business case supports it, the Department is pursuing distributed energy projects with micro-grid-ready applications that can enable the provision of continuous power in the event of a disruption. For example, the Army contracted with a developer to construct, own and operate an on-site solar photovoltaic array and an off-site wind project for Fort Hood, along with a power purchase agreement. The on-site solar energy generation system is being constructed as a micro-grid ready system to enhance the base's energy resilience. Once this hybrid project is completed and fully on-line, Army anticipates a substantial electricity cost avoidance to Fort Hood over the term of the contract.

Highlighted Issues

Base Realignment and Closure (BRAC)

The Department urges Congress to authorize one new round of base closures and realignments, in 2021, using the statutory commission process that has proven, repeatedly, to be the only effective and fair way to eliminate excess DoD infrastructure and to reconfigure what must remain.

The Department has not been authorized to undertake a BRAC analysis for over 14 years. In those years, the Department has undergone considerable changes that have impacted the force structure, mission requirements, and threats facing the United States. In addition, budget constraints imposed by the Budget Control Act have further strained existing resources and forced the Department to take risk in sustaining the infrastructure it does maintain. It is a fiscal reality that the Department cannot fully fund all sustainment requirements. Limited construction and maintenance funding is better used at enduring locations with the highest military value rather than keeping installations that the Department does not need. Reality and prudence dictate that infrastructure should be reconfigured to meet specific needs and changing threats or validated as enduring.

The Department requires a comprehensive BRAC process to reduce excess while enhancing military value, achieving recurring savings, and ensuring retention of sufficient space for contingency and surge requirements, and changing missions, tactics, and technology. As indicated in testimony over the last several years, and as supported by two recent capacity assessments, the Department is maintaining excess infrastructure capacity – between 19 and 22

percent depending on what level of force structure is used in the analysis. This level of excess is not surprising given the fact that in 2004 we found that the Department had 24% excess and BRAC 2005 reduced infrastructure by 3.4% (as measured by plant replacement value).

BRAC supports the Secretary of Defense's reform agenda as well as the Administration's commitment to rebuild infrastructure, focusing on the necessary so we do not waste resources on the excess. Of equal importance is the ability to conduct a holistic, periodic review of stationing in view of new and changing force structure configurations. With force structure adjustments under review today, a 2021 BRAC round provides a timely opportunity to integrate force structure decisions with the analysis to more efficiently synchronize delivery of supporting infrastructure.

Savings from BRAC rounds are real and substantial. The last five BRAC rounds are collectively saving the Department $12B annually. A new efficiency-focused BRAC could save the Department an additional ~$2B annually (based on the '93/'95 rounds).

The savings generated from BRAC result from avoiding the cost of retaining and operating unneeded infrastructure. DoD no longer has to fund the recurring operation and maintenance (O&M) nor the civilian and military personnel costs for those installations it closes or for the portion of those realigned bases that it does not retain. Savings from base realignments and closures are retained by the military Services and used to support higher priority programs that enhance modernization, readiness, and quality of life for our armed forces.

The Department and Congress have previously agreed that changes in force structure must be accompanied by corresponding changes in support infrastructure. Congress created the BRAC process for that reason, and it has emerged as the only fair, objective, and proven process for closing and realigning military installations in the United States. The Department has therefore worked with Congress to provide suggested changes to the BRAC legislation that would maintain the benefits of BRAC while addressing congressional concerns with the "transformational" BRAC 2005 round.

Our legislative proposal addresses congressional concerns while maintaining the core tenets of a process that has worked in five previous BRAC rounds. The first four BRAC rounds focused on efficiencies, while the BRAC 2005 round was more of a transformational BRAC across the Department. To ensure the next BRAC round is focused on saving money and maximizing efficiency, the Department's revised BRAC legislation adds a requirement for the Secretary of Defense to certify that the round will have the primary objective of eliminating excess infrastructure to maximize efficiency and reduce cost. Similar to the existing requirement to certify the need for a BRAC round, this certification occurs at the outset of the BRAC process and is a precondition to moving forward with development of recommendations. Additionally, subject to the requirement to give priority consideration to the military value selection criteria, the proposed legislation would require the Secretary to emphasize those recommendations that yield net savings within five years of completing the recommendation, and would limit the Secretary's ability to make recommendations that do not yield savings within 20 years. In order to make a recommendation that does not yield savings within 20 years, the Secretary must

expressly determine that the military value of such recommendations supports or enhances a critical national security interest of the United States.

The key is maintaining the essence of the BRAC process: treating all bases equally; all or none review by both the President and Congress; an independent Commission; the priority of military value; and a clear legal obligation to implement all of the recommendations in a time certain together with all the authorities needed to accomplish implementation (specifically the authority to undertake MilCon necessary to implement recommendations).

The Department believes we have addressed all congressional concerns. We have: looked at overseas installations first and successfully completed an efficiency-like BRAC in Europe that will save $500M a year; completed an updated excess capacity assessment based on a FY 2012 force structure; demonstrated the transformative nature of BRAC 2005 and how a future BRAC will be focused on efficiency; programmed costs and projected savings into the budget; and provided proposed legislative changes to the BRAC law.

The time to authorize another BRAC round is now. The BRAC process requires considerable time to analyze and develop recommendations, have those recommendations reviewed by the independent BRAC Commission, and then implement them over a six year period of time. The longer authorization is delayed, the longer the Department will be forced to expend valuable resources on unnecessary facilities instead of weapons systems, readiness, and other national security priorities.

We now hope that our efforts will result in a real dialogue with members of Congress regarding the need for and value of the BRAC process, ultimately resulting in authority for a 2021 BRAC round.

Addressing Perfluorooctanoic Sulfonate (PFOS) and Perfluorooctane Acid (PFOA)

In recent years, the presence of perfluorooctanoic sulfonate (PFOS) and perfluorooctane acid (PFOA) in drinking water has become an emerging issue. PFOS and PFOA are part of a class of man-made chemicals used in many industrial and consumer products to make the products resist heat, stains, water, and grease. In the 1970s, DoD began using aqueous film forming foam (AFFF), which contains PFOS, and in some cases PFOA. AFFF is mission critical because it quickly extinguishes petroleum-based fires.

On May 19, 2016, the U.S. Environmental Protection Agency (EPA) issued Lifetime Health Advisories (LHAs) recommending the individual or combined levels of PFOS and PFOA in drinking water be below 70 parts per trillion.

The Department is committed to addressing the risk associated with PFOS and PFOA and ensuring safe drinking water for the people living and working on our installations. As such, in June 2016 I directed the Military Departments to test for PFOS and PFOA where DoD supplies drinking water. Under this policy, the Department has tested 85% of our 505 drinking water systems. Where the test results were above the EPA LHA level, DoD is following the EPA advisory recommendations, including providing consumers bottled water. Where DoD purchases drinking water, I encouraged installations to ask if their drinking water supplier has

tested the drinking water and if so, whether the results are below the EPA LHA level. If our drinking water supplier has not conducted testing, the DoD Components are testing the on-base drinking water. If the results of these tests are above the EPA LHA level, the installation will work with the drinking water supplier to taking appropriate actions (such as providing bottled water) to ensure our Service members, their families, and other installation personnel receive safe drinking water.

Although the EPA LHA level is only guidance under the Safe Drinking Water Act and is not an enforceable drinking water standard, DoD considers the EPA's LHA toxicity information when assessing risk to human health under its cleanup program. DoD followed a comprehensive approach to identify installations where we have used AFFF containing PFOS or PFOA and suspect there was a release that may impact drinking water. As of December 2016, DoD has identified 393 active and BRAC installations where there are one or more areas with a known or suspected release of PFOS or PFOA. The Military Departments are following the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. These known or suspected PFOS and/or PFOA release areas are in various stages of assessment, investigation, and cleanup. Throughout the CERCLA process, the Department will work in concert with regulatory agencies and communities and will share information in an open and transparent manner. Now that we have an initial inventory, it may take a few years to determine the potential cleanup costs as we collect information on the nature and extent of the releases. As of December 31, 2016, the Department has spent approximately $204 million on sampling, analysis, and cleanup to address PFOS and PFOA.

We are also taking steps to remove and replace AFFF containing PFOS from our supply system. In January 2016, I issued a policy requiring the Military Departments to issue Service-specific risk management procedures to prevent uncontrolled land-based AFFF releases during maintenance, testing, and training activities. The policy also requires them to remove and properly dispose of AFFF containing PFOS from the local supplies for non-shipboard use where practical. Each of the Military Departments is taking actions to remove AFFF containing PFOS from the supply system. We are also investing in research to develop a fluorine-free foam as I mentioned earlier. Addressing PFOS and PFOA is a priority for the Department, and we are committed to finding an alternative that meets critical mission requirements while protecting human health.

Rebalance to the Asia-Pacific

Rebasing of Marines to Guam

Under a plan agreed upon by the United States and Japan in April 2012, approximately 5,000 Marines, organized as a Marine Air Ground Task Force (MAGTF), will relocate to Guam. The current timeline envisions the start of forces flowing to Guam in 2024.

This plan represents a revision from the 2006 U.S.-Japan "Realignment Roadmap," in which up to 8,600 Marines with significant numbers of family members would have relocated from Okinawa to Guam. The current plan is much more operationally effective and resilient, in that MAGTFs will be established in Guam, Australia and Hawaii, as well as retaining a MAGTF capability with the III MEF (Marine Expeditionary Force) headquarters in Okinawa.

The realignment of Marines to Guam along with the expansion of training capability in the Commonwealth of the Northern Mariana Islands (CNMI), while independent actions, are both critically important if we are to achieve a more geographically dispersed, operationally resilient, and politically sustainable posture in the Asia-Pacific. The Government of Japan (GoJ) has committed to providing up to $3.1 billion (FY 2012 dollars) towards construction facilitating the Marine Corps relocation to Guam and development of training capabilities in the CNMI, of which ~$1.3 billion has already been provided to the U.S. Treasury. Japan's support is based, in part, on the calculation that the status quo of U.S. bases in Okinawa is unsustainable. Relocating Marines to Guam, the westernmost territory of the United States, retains their deterrent effect in Northeast Asia.

The FY 2018 budget request includes $262 million in MilCon and Planning and Design to continue construction at the North Ramp of Andersen Air Force Base (AAFB) in support of the Marine Aviation Combat Element and a Water Well Field project off-base in the vicinity of Finegayan. Later this year, after a long delay awaiting completion of required environmental documentation, we expect to break ground on the main cantonment at Finegayan. We also intend to award a $309 million utilities and site improvement project using a portion of the GoJ-provided funds already deposited in our Treasury. Additionally, we intend to award the $126 million FY 2016 construction project that will start development of the live-fire training range complex (LFTRC) at the Northwest Field of Andersen. This facility is critical for maintaining readiness of the units to be stationed on Guam.

Commonwealth of Northern Mariana Islands (CNMI) Initiatives

To increase joint military training capabilities in the Asia-Pacific region, in addition to the ranges to be constructed on Guam, the Department is pursuing development of live-fire ranges and training areas in the CNMI known as the CNMI Joint Military Training (CJMT) complex. The USMC is leading this initiative on behalf of the U.S. Pacific Command (PACOM). The GoJ has agreed that ~$300 million of its overall contribution may be applied to establishing these training areas, which will support regular training events for all Marine Forces Pacific units, higher level headquarters, allies in a bilateral or multilateral venue, and other military Services.

Due to CNMI's concerns with immigration issues (expiration in 2019 of the CNMI-Only Transitional Worker (CW) program) and the potential economic and environmental impacts of our proposed development (use of live-fire and potential destruction to their lands), Governor Ralph Torres requested consultations as authorized by Section 902 of the Covenant to Establish the CNMI in Political Union with the United States of America.

The first consultation meeting occurred at the White House in June, 2016, and was followed by site visits to the CNMI islands of Saipan and Tinian to see businesses and construction sites impacted by the limited number of foreign workers, facilities working to train and grow the U.S. worker population, and areas impacted by the expansion of military training. Meetings with elected officials and affected members of the community, along with the site visits, provided the Department with first-hand knowledge of the economic challenges facing the CNMI people, government, and private industry.

A key recommendation from the consultation process was to establish a CNMI/DoD "Coordinating Council" to further enhance respectful dialogue with CNMI, jointly developing a

way ahead that supports our operational requirements while minimizing local impacts. That Council's kick-off meeting was held on June 2nd. Using this construct, the Department will diligently work with CNMI to establish a mutually beneficial path forward.

In addition to the CJMT, the Department is also pursuing a divert capability for approximately 12 tanker aircraft for the U.S. Air Force in CNMI. Although the initial study called for this capability to be met by an expansion of facilities at Saipan International Airport, based on discussions with local CNMI leadership the Department elected to locate the entire divert capability to the north side of the Tinian Airport.

The Air Force signed its Record of Decision for the divert capability in December 2016 and has provided the Commonwealth Ports Authority with an Airport Layout Plan design that meets the Department's requirements while addressing CNMI's desires. There are still several requirements remaining to implement this initiative, to include approval by the Federal Aviation Administration. The Department is committed to working with CNMI to find a mutually agreeable way ahead, with a target of 2021 for tanker capacity on Tinian.

Workforce Issues in Guam and Commonwealth of Northern Mariana Islands (CNMI)

The resident workforce in Guam and CNMI is insufficient to support their economies, so foreign worker H-visas are critical. Congress recognized this and established an exemption for Guam and CNMI to the otherwise applicable numerical caps for H-1B and H-2B nonimmigrant workers. This exemption expires on December 31, 2019.

A sustainable, self-sustaining economy on Guam and CNMI is vitally important to our national security and in support of our enduring military presence. DoD needs sufficient workers to build and support the Guam realignment as well as the CJMT and Divert initiatives, if we are to achieve a dispersed, operationally resilient, and politically sustainable posture in the Asia-Pacific region. If employers on Guam and CNMI cannot source required labor for infrastructure projects, DoD may experience impacts to program timelines and/or cost increases, making it difficult for the Department to remain within the Congressionally mandated cost cap of $8.7 billion (FY 2012 dollars).

Other Items

Mission Compatibility Evaluation Process

The Department appreciates the statutory changes made by the National Defense Authorization Act for FY 2017 to Title 49 of the United States Code. These changes were developed in consultation between DoD and the Federal Aviation Administration (FAA) to assist FAA in supporting DoD when an energy project would present an unacceptable risk to national security. These changes reduce the likelihood that DoD's mission capabilities may be degraded by incompatible energy developments. As a result of congressional direction and our own efforts, we are effectively evaluating the mission impact of utility-scale energy projects. In 2016 the Department reviewed over 4,200 applications for energy projects that were forwarded by the FAA; the greatest number of reviews in a single year by the DoD Siting Clearinghouse. The DoD Siting Clearinghouse worked aggressively with the Military Departments, energy project

developers, and interested states to implement affordable and feasible mitigation solutions where DoD missions might have been adversely impacted. No project reviewed in 2016 rose to the level of an unacceptable risk to the national security of the United States, which is the statutory threshold to object to a project.

Conclusion

Thank you for the opportunity to present the President's FY 2018 budget request for DoD programs supporting installations, energy, and the environment. We appreciate Congress' continued support for our enterprise and look forward to working with you as you consider the budget request.